LCS Mission Modules

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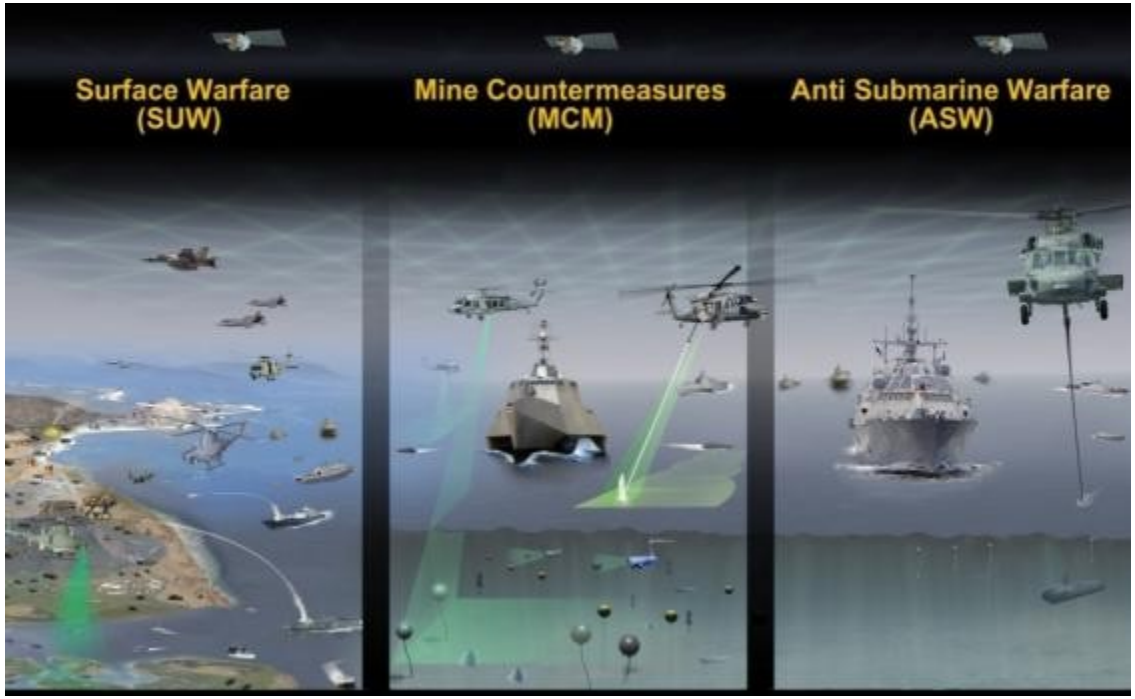
Agenda

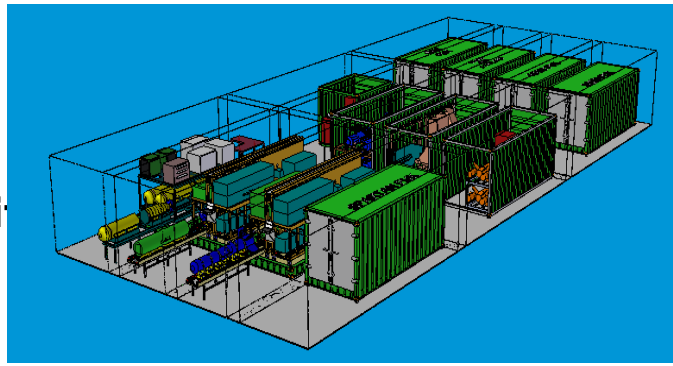
- Littoral Combat Ship
- Mission Package Description/Definition
- Overall LCS Mission Module Program Summary
- Mission Package Capabilities & Status



Assuring Access in MCM, ASW & SUW Mission Areas

Littoral Combat Ship

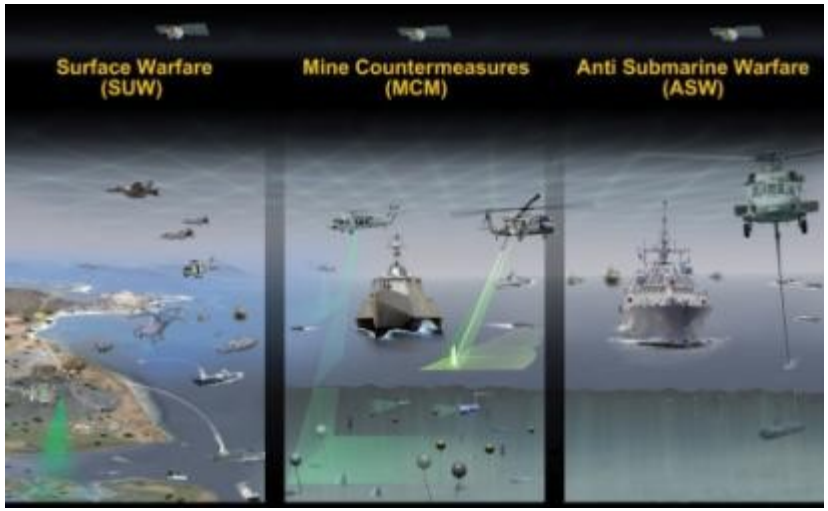
- **Optimized for warfighting in the littoral**
  - **Unique designs for unique environment**
  - **Fast, maneuverable, shallow draft**
- **Targeted at critical capability gaps**
  - **Reconfigurable single-mission focus**
  - **Mines; small fast surface craft; diesel submarines**
- **Modular open systems architecture**
  - **Flexible system for dynamic battlespace**
  - **Advanced unmanned air, surface, and underwate vehicles**
  - **Onboard sensors, weapons, command and contr**
- **Naval and Joint Force multiplier**
  - **Operational flexibility for sea superiority and assured access**
  - **Integral member of future surface combatant family of ships**
  - **Fully netted with the battle force**
- **Analysis validated small, fast delivery vehicle wi integrated focused mission package**



LCS Mission Modules System Description

Mission:

Mission: The LCS MPs will provide the Combatant Commanders a modular, focused mission capability to provide assured access against littoral mine, submarine and surface threats. Mission Systems are incrementally added to the Mission Package (MP) as they reach a level of maturity necessary for fielding. These systems provide a warfighting capability that will be continuously improved through an evolutionary acquisition development process.



Description:

A MP consists of Mission Modules (MM) with Mission Crew and Support Aircraft. MMs combine Mission Systems (vehicles, sensors, weapons) and support equipment that install into the Seaframe via standard interfaces. Mission Systems = vehicles, sensors, or weapons. Mission Module = Mission Systems + Support equipment + Standard interfaces. Mission Package = Mission Modules + Mission Crew + Supporting Aircraft.

Platform:

Littoral Combat Ship

Employment:

LCS Mission Packages provide sufficient flexibility for the at-sea commander to successfully achieve assured access mission requirements.

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Mission Package Defined

MISSION MODULE
LCS MM Program - PMS 420

+ CREW & SUPPORT AIRCRAFT

= MISSION PACKAGE

Mission Systems + **Support Equipment**

Weapons
- RMMV
- USV
- 30MM Gun
- AMNS
- SSMM

Sensors
- ALMDS
- AQS-20A
- COBRA

Support Containers
Support Equipment
Standard Interfaces

MPCE/MVCS Software

MPCE/MVCS Hardware

VTUAV

Crew Detachments
- Mission Modules
- Aviation

MH-60S

Ship Hardware

MP

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Mine Countermeasures (MCM) Mission Package

VEHICLES

MH60S Helicopter

N88
PMA 299

Sikorsky

Vertical Takeoff Unmanned Air Vehicle

N2/N6
PMA 266

Northrop Grumman

Unmanned Surface Vehicle

N86
PMS 406

Oregon Iron Works

Remote Multi Mission Vehicle

N85
N86
PMS 403

Lockheed Martin

SENSORS

Surface Mine Countermeasures Unmanned Undersea Vehicle

N85
N86
PMS 406

TBD

Airborne Laser Mine Detection System

N85
N86
PMS 495

Northrop Grumman

Coastal Battlefield Reconnaissance & Analysis

N85
N86
PMS 495

Northrop Grumman

AN/AQS-20A Mine Hunting Sonar

N85
N86
PMS 403

Raytheon

WEAPONS

Airborne Mine Neutralization System

N85
N86
PMS 495

Raytheon

SWEEPS

Organic Air & Surface Influence Sweep

N85
N86
PMS 495

ITT (EDO)

Unmanned Surface Sweep System

N85
N86
PMS 406

ITT (EDO)

MCM MS Quantities

- USV (x1)
- USSS (x1)
- RMMV (x2)
- OASIS (x1)
- AMNS (x1)
- ALMDS (x1)
- AN/AQS-20A (x3)
- COBRA (x1)
- MH60S Helicopter (x1)
- VTUAV (x1)
- SMCM UUV w/ LFBB (x2)

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Surface Warfare (SUW) Mission Package

Surface Warfare Modules	
Mission Systems	Surface-to-Surface Missile Module (SSMM): x1 **- Launchers: x3** - Missiles: x45 30mm Gun Mission Module (GMM): x2 Maritime Security Module (MSM): x1 Irregular Warfare Module: x1 **Aviation Module: x1** - MH-60R: x1 **- VTUAV: x2**
Other	Support Equipment

VEHICLES

MH60R Armed

N88
PMA 299

Sikorsky / Lockheed

Vertical Takeoff Unmanned Air Vehicle

N2/N 6
PMA 266

Northrop Grumman

SENSORS

Helo Capabilities:
- **EO/IR Sensor**

VTUAV Capabilities:
- **EO/IR Sensor**

WEAPONS

- **Crew served guns**
- **Hellfire missiles**

Surface-to-Surface Missile Module*

N86
PMS420 IWS3

Griffin Block IIB

30mm Gun Mission Module

N86
PMS 420 IWS3

GD-LS / Bushmaster

* SSMM System configuration informed by the results of the Navy's SSMM Trade Study. Recommended an incremental acquisition to field an Inc I SSMM using a Griffin Block IIB Missile.

Maritime Security Module

N86
PMS 420
PMS 325
SPAWAR

PMS 480

Irregular Warfare Module

N86
PMS420

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Anti-Submarine Warfare (ASW)

Mission Package – Increment II

VEHICLES

Vertical Takeoff and Landing Tactical Unmanned Air

N2/N6
PMA 266

Northrop Grumman

VTUAV Capabilities:
- EO/IR Sensor

Helo

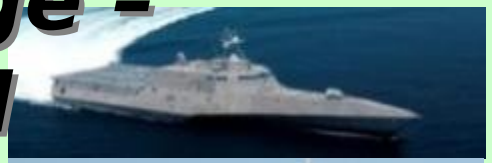
N88
PMA 299

Sikorsky / Lockheed

Helo Capabilities:
- ALFS Dipping Sonar
- Sonobuoys

LCS Seaframe

General Dynamics



Lockheed Martin

WEAPONS

Mk54 Torpedo

N88
PMS 404

Raytheon

Light Weight Tow Torpedo Countermeasure

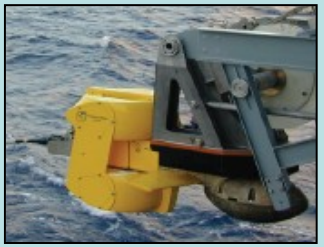
N86
PMS 420 IWS5

TBD

SENSORS

CAS VDS

N86
PMS 420 IWS5



ADM: DRS Sonar / Thales
EDM/Production: TBD

Multifunction Towed Array

N86
PMS 420 IWS5

Lockheed Martin

Anti-Submarine Warfare Increment II Modules

Mission Systems	ASW Escort Module: x1 - Continuous Active Sonar (CAS) Variable Depth Sonar (VDS): x1 - Multi-Function Tow Array (MFTA): x1 - Mission Planning, Execution Management, & Decision Support System: x1 Torpedo Defense Module: x1 - Light Weight Tow (LWT) Torpedo Countermeasure: x2 Aviation Module: x1 - MH-60R: x1 - VTUAV: x2
Other	Support Equipment

Statement A unlimited

Questions?